

## ABSTRACT

The present inventors have found the presence of a nanobubble that has not been confirmed conventionally, and established a method for producing nanobubbles. The inventors have determined the theoretically expected characteristics of the produced nanobubbles, found new characteristics by analyzing data experimentally collected, and elucidated the relationship among the characters. Specifically, the inventors have found that a nanobubble has features such as decrease of the buoyant force, increase of the surface area, increase of the surface activity, generation of a local high-pressure field, interface activating action, and sterilizing action thanks to electrostatic polarization. By the association among the features, any of wide variety of objects can be cleaned with high performance and with light environmental load thanks to the function of adsorbing foul components, the function of cleaning the surface of an object quickly, and the sterilizing function, and polluted water can be purified. Nanobubbles can be applied to an organism to recover from fatigue and effectively used for chemical reactions.